

CONFIDENTIALCONFIDENTIAL

50X1-HUM

dried placentae, and cartilage conserved by this method and kept for 2, 4, and 6 months. In Kharchenko's possession are preparations from liver, placenta, a whole prepared head, etc., which have been kept for years without spoiling.

The idea of conserving tissues by dehydration is an entirely reasonable one because in this process the tissues lose liquid only: the hormones, the biochemical structure, and the morphology remain unchanged (Kharchenko, Kli-menko, Angarskaya, Kur Kutsevich, Gershun, et al.). The method of preparing the tissues is very simple. Kharchenko designed an apparatus which pumps in slightly compressed warm (37°-38° C) air. This air passes through all blood vessels of the tissue being prepared and effects dehydration up to complete dryness. Kharchenko prepares placentae for therapeutic purposes and placental membranes, skin, cartilage, and bone for homoplastic surgery. He concentrated on placentae as yielding the most valuable preparation for tissue therapy, according to Academician Filatov. Kharchenko's work and published data show that placentae contain a large quantity of hormones, vitamins, enzymes, and other biologically active substances.

A fresh placenta taken from a confined woman who has been examined in regard to tuberculosis and syphilis is used in the drying process. The placenta is washed with a warm physiological solution, and the navel vein is connected with the apparatus, which pumps in air at 37°-38° C under a pressure corresponding exactly to that under which blood circulation in the placenta takes place. The warm air extracts moisture, so that the placenta is dried within 10-12 hr. If the placental membrane alone is needed, air is passed through for 2-3 hr only. After drying the membrane, passage of air must be continued up to 10-12 hr if the whole placenta is to be dried. During this time, the already-dried placental membrane does not undergo any changes. When the process of drying has been completed, the placenta, after being freed of blood vessels and connective tissue, is cut in pieces weighing 0.01 g each for ophthalmological practice and 0.1 g each for the resorption of scar growths. Placental membrane is cut into plates of the required size. Each piece is placed into a glass ampule, whereupon the ampules are sealed and the contents autoclaved at 110° C. After this, some pieces are submitted to bacteriological examination for the purpose of control. Before use, a sterile ampule, prepared in this manner, is opened under strictly aseptic conditions; then the contents are put into a sterile physiological solution for 15-20 min and used as required.

In the same manner Kharchenko obtains conserved skin by dehydrating corpses of babies. He uses principally corpses of babies delivered at the right time, but born dead, and those of babies which died in the first few hours after birth. The corpse is washed with warm physiological solution and cut in half in the region of the navel, whereupon the intestine is removed. Drying is carried out by means of the apparatus mentioned above. The air for the upper part of the corpse is introduced through the upper section of the abdominal aorta, and for the lower part through the lower section of the abdominal aorta.

Kharchenko also dries whole corpses of adults. For this process 20-24 hours are required. Excised pieces of skin from the dried corpse are treated as described above for placentae. Sterility is controlled bacteriologically.

We cannot assert that our attempts to bring about softening or resorption of scars in the oral cavity by implanting dried placenta under the skin of the neck or the chest led to promising results. On the other hand, Professor Frumin, who works at the same hospital, obtained positive results by implanting placenta in 16 cases of persistent scar stenoses of the throat caused by fire-arm wounds. It is possible that our error consisted in not making repeated transplantations, as was done by Professor Frumin, who repeated the operation two or three times. Transplantation of placental membrane on oral-wound

- 2 -

CONFIDENTIAL**CONFIDENTIAL**

CONFIDENTIALCONFIDENTIAL

50X1-HUM

surfaces after excision of scars yielded excellent results in 15 cases in which we applied this treatment. In two cases the whole front of the oral cavity was restored.

Placental membrane, prepared according to Kharchenko, is transplanted on a wound surface of the oral cavity in such a manner that the wound surface is in contact with the rough surface of the membrane. The membrane is pressed to the wound by a stanch and held there for 8-10 days. During this period, the membrane grows on with a result similar to that obtained by us in transplantations in the oral cavity according to Tirsch's method. Some transplants become pale and in 2-3 weeks assume the appearance of mucous membrane, while others assume a greyish color and remain tightly grown together with the underlying tissue. In both cases they stimulate restoration of function.

We had the opportunity to observe for 16 months a patient who was a veteran of World War II and a student of the Stomatological Institute. In his case the transplants were assimilated, but differed in color from the surrounding mucous membrane. He was operated on by the author for ankylosis of the lower jaw which resulted from a firearm wound of the face. The splinter entered the region of the jawbone and stuck at the corner of the lower jaw from the medial side. It later dropped to the neck and was removed from that location. The coronal appendix [processus coronoideus?] grew onto the jaw arch [arcus zygomaticus?] while the m. pterygoideus internus underwent ossification. An osteotomy of the coronal appendix was carried out, the osseous foci were excised from the muscle, and the scar growths removed from between the lower and upper jaw. Placental membrane was interposed between the fragments of split bone. Placental membrane was also used for covering the wound surfaces which resulted after removal of scar tissue and osseous growths. Complete healing took place; the patient was able to open his mouth normally, and maxillary function with respect to chewing did not present any difficulty to him.

Eight additional patients were operated on for ankylosis of the jaw-temple joint due to firearm wounds. The operations were carried out by Rochet's method, i.e., an osteotomy of the ascending branch of the lower jaw was performed. In these cases, placental membrane was also interposed instead of fascia or the inner layer [plate?] of m. masseter. When placental membrane is interposed, it must be folded in such a manner that its rough surfaces touch the bone surfaces of the fragments.

In his work, assistant of the clinic V. I. Korobkov is trying to solve the question whether the placental membrane leaves and bone become joined or whether the bone is surrounded by growth as a foreign object. One may assume that the placental membrane grows onto the bone. This is what Filatov and members of his school assert. One may deduce the correctness of this assumption by analogy with the following example. A veteran of World War II had a scar outgrowth on the upper eyelid as a result of a firearm wound. Upon excision of the scar, a wound 3 x 5 cm remained. This wound was completely covered with two flaps of skin. One of the flaps was applied with the use of Krauze's technique while the other was a graft of skin taken from a baby's corpse after the corpse had been treated according to Kharchenko's method. Both the autoplasmic flap and the homoplastic flap from the corpse healed on equally well. A strip taken for a microscopic examination carried out by Docent Toropov showed that both transplants grew onto the underlying tissue.

The material collected by us so far is not very extensive. Nevertheless, it demonstrates that tissue dehydrated according to Kharchenko and sterilized by autoclaving is capable, when used for transplantation and interposition, of replacing tissue taken from the patient. The available facts show that we can spare excessive trauma to the patient, especially when the operation is not successful.

- 3 -

CONFIDENTIAL
CONFIDENTIAL

CONFIDENTIALCONFIDENTIAL

50X1-HUM

The mass production of such tissue, prepared according to Kharchenko, permits us to have on hand an unlimited quantity of ready-made transplants. The fact that prepared tissue can be transported and stored for long periods simplifies the technique of therapy with the aid of conserved tissue and facilitates homoplastic surgery. Both therapy and transplantation onto wound surfaces (it is needless to mention that this also applies to interposition) become accessible to the ordinary, nonspecialist surgeon, thanks to the simplified techniques of conservation and storage. If the operation has to be repeated, the surgeon is rid of considerable difficulties. In relapses after operations for ankylosis of the jaw-temple joint and after arthroplastic surgery, the surgeon who intends to perform a second operation is faced with the difficult question as to where he can obtain material for an interposition. With mass production of dehydrated and autoclaved placental membrane, any worry on this score is eliminated. The possibility of obtaining bone and cartilage transplants prepared by the same method also opens wide perspectives.

- E N D -

- 4 -

CONFIDENTIAL**CONFIDENTIAL**